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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,480	06/12/2001	Jack C. Whittier	HrdMgmtCIP	6452

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Santangelo Law Offices, P.C.  
Third Floor  
125 South Howes  
Fort Collins, CO 80521

EXAMINER
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MYERS, CARLA J

ART UNIT	PAPER NUMBER
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1634

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11/05/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/879,480	<b>Applicant(s)</b> WHITTIER ET AL.	
	<b>Examiner</b> Carla Myers	<b>Art Unit</b> 1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 28,30,31,33-40,45,46 and 49-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28, 30, 31, 33-40, 45, 46, 49 and 50-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This action is in response to the amendment filed August 1, 2008. Applicant's arguments have been fully considered but are not persuasive to overcome all grounds of rejection. All rejections not reiterated herein are hereby withdrawn. This action is made final.

2. Claims 28, 30, 31, 33-40, 45, 46, 49 and 50-53 are pending and have been examined herein.

### **Priority**

3. The subject matter of the present claims is entitled to priority only to the instant filing date of June 12, 2001. A claim as a whole is assigned an effective filing date rather than the subject matter within a claim being assigned individual effective filing dates. The priority applications do not disclose the general concept of a method of managing female bovine mammals comprising each of the steps of managing a plurality of female bovine mammals for a reproductive factor, inducing early puberty in said plurality of female bovine mammals, inseminating substantially all of the female bovine mammals with sex-sorted spermatozoa, producing offspring comprising substantially all female offspring and harvesting substantially all of said plurality of female bovine mammals.

### **Response to Remarks:**

In the response, Applicants state that the present invention is entitled to priority to provisional application 60/211,093, filed June 12, 2000. Applicants state that the provisional application contemplates the particular combination of elements recited in the claims. Applicants point to page 5 of the '093 specification as teaching that the

invention should be understood as involving both management techniques as well as separable individual elements. Page 7 of the '093 specification is cited as teaching that the invention encompasses various combinations of elements. Applicants conclude that one would understand that the inventors contemplated combining elements.

These arguments have been fully considered but are not persuasive. The general statements in the '093 application regarding the combining of elements do not provide support for the specific embodiments of the claimed invention. While the specification of '093 may use the phrase "combination of elements," this recitation does not provide support for combining particular elements in a particular order in order to arrive at the presently claimed invention. There are no clear teachings in the '093 application to combine the individual concepts set forth in the background of that application and in the separate examples of that application into a single embodiment. The previously cited passages provide support for the individual concepts of a method of managing a plurality of females for an artificial insemination reproductive factor and for the concept of inducing early puberty in bovine. However, the individually disclosed concepts set forth throughout the '093 application do not provide support for the particular combination of steps and elements required by the present claims wherein the method requires each of the steps of managing a plurality of female bovine mammals for at least one artificial insemination reproductive factor, inducing early puberty in substantially all of said plurality of female bovine mammals, fertilizing at least one egg derived from each of the substantially all of the plurality of using sex-sorted spermatozoa wherein fertilization occurs prior to the typical age of puberty, producing

offspring from substantially all female offspring, wherein the offspring comprise substantially all female offspring, and harvesting substantially all of said plurality of female bovine mammals after the step of producing offspring.

### **Claim Rejections - 35 USC § 103**

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 28, 33, 39, 40, 46, 49 and 50-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hohenboken (Theriogenology. 1999. 52: 1421-1433; cited in the IDS of 6/12/01) in view of Petit (1975; cited in the IDS of 6/12/01) and Hall (Journal of Animal Science. 1997. 1606-1611; cited in the IDS of 6/12/01).

This rejection was previously presented in the Office action of February 1, 2008 and has been modified herein to address the amendments to the claims.

Hohenboken teaches a method of managing a plurality of female bovine mammals comprising obtaining a plurality of female bovine mammals, managing the female bovine for a reproductive factor (i.e., managing the female bovine for their ability to reproduce), fertilizing at least one egg of said female bovine wherein fertilization is performed by artificial insemination using sex-sorted sperm, producing female offspring from said bovine female mammals, and harvesting said female bovine following the production of offspring (see abstract and pages 1426 and 1428). Hohenboken teaches that use of sex-sorted semen to produce only one heifer calf allows for only one parturition per female and that most cows would be slaughtered at a young age to produce consumer-acceptable beef without a maturity discount (page 1428). It is further stated that "(i)n a favorable marketing environment and under conditions allowing first parturition at a younger age, sexed semen would help to achieve profitable SSBH beef production" (see page 1428). Additionally, Hohenboken (page 1426) states that mating younger cows would have the additional advantage of reducing calving difficulty and increasing calf survival.

Hohenboken does not exemplify a method of inducing early puberty in order to allow for the fertilization of younger cows.

However, Petit teaches that heifers vary with respect to the start of their first estrus. It is stated that in heifers, providing an improved nutrition from birth onwards results in an early onset of estrus and an increase in weight gain (see page 158-159). Petit (page 172) teaches that inducing early puberty to produce early-maturing heifers is a means for managing animals so as to enhance their reproductive efficiency. For

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example, Petit teaches the use of early-maturing heifers in the "once-calved heifer system" to increase calf production and allow for harvesting of heifers at 2 years of age or earlier.

Additionally, Hall teaches inducing early puberty in heifers by causing a rapid weight gain then a slow weight gain for heifers at ages 6.5 months to 12.5 months (see for example page 1607). Hall teaches that inducing puberty is a means for managing animals so as to enhance their reproductive efficiency.

In view of the teachings of Petit and Hall, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Hohenboken so as to have induced early puberty in the female bovines that were to be artificially inseminated in order to have achieved the advantage set forth by Hall of enhancing their reproductive efficiency and the advantages discussed by Hohenboken of reducing calving difficulty, increasing calf survival and providing female bovine that could be harvested at a younger age, thereby providing consumer-acceptable beef without a maturity discount and improving the effectiveness of the integrated system.

Regarding the recitation of inducing early puberty between about 250 to about 270 days after birth, or between 250 to 270 days after birth in new claims 52 and 53, respectively, Hohenboken does not teach inducing early puberty at about 250-270 days. However, Hall teaches inducing early puberty by about 9.5 months of age (i.e. "about" 270 days after birth). Petit (page 158) teaches that the time of first estrus varies with the breed of cattle, with Holsteins having their first estrus at 6 to 9 months, and hardy breeds of heifers having their first estrus early than beef heifers. It is stated that age of

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first estrus is influenced by the heifer's nutritional and environmental conditions.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have induced early puberty at an age of about 270 days after birth, depending on the breed of bovine, in order to have provided the most effective integrated breeding system. Further, to have determined the optimum time at which puberty is induced would have been obvious to one of ordinary skill in the art and well within the skill of the art. It is well settled that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also Merck & Co. v. Biocraft Labs. Inc., 874 F.2d 804, 809, 10 USPQ2d 1843, 1847-48 (Fed. Cir. 1989). In the present situation, the prior art teaches the advantages of inducing early puberty and teaches the parameters which allow for the induction of early puberty, including the choice of cattle breed and the nutritional and environmental conditions in which cattle are raised. Accordingly, optimization of the breeding system so as to have selected the optimum age at which female bovine reach their first estrus, including the ages of about 250 to about 270 days after birth or between 250 to 270 days after birth, would have been obvious to one of ordinary skill in the art and well within the skill of the art.

Regarding claim 33, the combined references do not specifically teach inducing early puberty by feeding the female bovine a sufficient ration of feed to produce an average weight gain of about 1.2-1.4 kg/day. However, Petit teaches that an improved level of nutrition, and thereby weight gain, induces early puberty and Hall teaches that increased weight gain induces early puberty. Accordingly, it would have been obvious to



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one of ordinary skill in the art at the time the invention was made to have optimized the amount of food given to the female bovine in order to have produced the most effective average weight gain, including an average weight gain of about 1.2 –1.4 kg/day, in order to have achieved the advantage of inducing early puberty. As discussed in MPEP 2144.05(b), “(w)here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955).

Regarding claims 39 and 40, Hohenboken teaches that the female bovine should be harvested following the production of offspring, at an age in which the female bovine are about 24 months of age.

Regarding claim 46, the method of Hohenboken can be used to produce female offspring at a percentage of 70% female offspring, about 80% female offspring, or about 90% female offspring.

Regarding claim 49, Hohenboken (page 1428) teaches that the single-calf heifer system includes producing one calf prior to harvest and replacing the harvested female bovine.

Regarding claim 50, Hohenboken (page 1428) teaches that the method is one in which a female bovine produces offspring in a single parturition.

Regarding claims 51-53, Hohenboken states application of the single-sex, heifer bred system to beef cattle. It is stated that this method is advantageous in beef cattle because sexed semen can be used to “produce specialized, genetically superior replacement heifers from as small a proportion of the herd as possible. This would allow

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the remainder of the herd to produce male calves from bulls or breeds with superior genetic merit for growth, feed conversion efficiency, and carcass merit...Use of sexed semen would make terminal crossbreeding systems more efficient and sustainable in beef cattle" (see abstract). Further, Petit teaches inducing early puberty in Holsteins and in beef heifers by improving the level of nutrition (page 158). Hall also teaches inducing early puberty in beef heifers. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have induced early puberty specifically in beef heifers to achieve the advantages set forth by Hohenboken of providing a more efficient and sustainable system for beef cattle.

**Response to Remarks:**

In the response, Applicants state that Hohenboken is not prior art to the claimed invention because this reference was accepted for publication on September 29, 1999, whereas the claimed invention is entitled to priority to application 09/001,394, filed December 31, 1997.

This argument has been fully considered but is not persuasive because the claimed invention is not in fact entitled to priority to the 09/001,394 application. While the response asserts that the provisional '093 application provides support for the claimed invention, the response does not point to particular teachings in the '394 application which provide support for the claimed invention. For example, the '394 application does NOT teach the concept of inducing early puberty (and particularly in a method for managing bovine female mammals), as is required by the present claims. As discussed above, the present application is entitled to priority only to the instant filing date of June 12, 2001.

Further, the present application does not claim priority to the '394 application. In the response of April 5, 2004, the claim to priority was modified to indicate that the present application claims priority only to provisional applications 60/224,050, filed 8/9/2000 and 60/211,093, filed June 12, 2000. See the amendments to the specification and the Application Data Sheet filed April 5, 2004.

The response states that the specification at page 13, lines 9-10 states that a research project was begun in July 1999 and that the research project is described on pages 13-15. Applicants thereby conclude that the claimed invention is entitled to the filing date of at least July 1999.

This argument has also been fully considered but is not persuasive. Applicants cannot rely on a separate statement in the specification that a project began in July 1999 as evidence of conception and reduction to practice of the claimed invention as a whole. Such a statement in the specification does not constitute the filing date of an application and does not serve as evidence of conception and reduction to practice of the claimed invention prior to the date of an applied reference.

Applicants state that Petite does not teach achieving puberty in beef cattle earlier than 12 months. It is noted that this argument applies only to claims 51-53 since the remaining claims do not require beef cattle. Regarding claim 51, this argument is not convincing because the argument is directed to limitations that are not recited in the claim since claim 51 does not require that puberty is induced prior to 12 months. Further, Hohenboken does teach application of the method of the single-sex bred-heifer system to beef cattle. Hohenboken (see abstract) states that this method is advantageous in beef cattle because sexed semen can be used to "produce specialized, genetically superior replacement heifers from as small a proportion of the herd as possible. This would allow the remainder of the herd to produce male calves

from bulls or breeds with superior genetic merit for growth, feed conversion efficiency, and carcass merit...Use of sexed semen would make terminal crossbreeding systems more efficient and sustainable in beef cattle." Also, Petit teaches inducing early puberty in beef heifers by improving the level of nutrition (page 158). Moreover, Hall specifically teaches inducing early puberty in beef heifers.

Regarding claim 52, Applicants assert that the term "about 270" does not encompass 290 days. Applicants cite the MPEP as noting that the court in *In re Woodruff* held that "about 1-5% allowed for concentrations slightly above 5%, thus a claim limited to "more than 5% was held to overlap." Applicants assert that because the range of 250 to 270 is about 20 days, 290 days would not be within the range of "about 250 to about 270."

These arguments have been fully considered but are not persuasive. The specification fails to provide a definition for the term "about" which would require one to read this term as excluding 20 additional days. Further, the finding of *in re Woodruff* is not contradictory to the present rejection since the court found that a teaching of "more than 5%" would read on the claim. Applicants have not provided any evidence that one would not consider that 290 days is excluded by the recitation of "about 250 to about 270 days." Is "about 250 to about 270 days" considered to be limited to only 251 to 271 days? or 252 to 272 days? No teachings in the specification or prior art have been cited which would support a conclusion that about 250 to about 270 days is intended to exclude 290 days.

Regarding the induction of early puberty, the specification (para [0043]) teaches that "In a beef cattle embodiment of the invention a female can be born, weaned at between about 95 to about 125 days, estrous synchronized at between about 250 to about 280 days, artificially inseminated, calve about 9 months later and be harvested

prior to 24 months." The specification does not teach the criticality of inducing early puberty by day 270 after birth and does not define the term "about" with respect to the age at which puberty is induced. Accordingly, there is nothing in the specification which indicates that inducing puberty at "about 270 days" does not include inducing puberty at 9.5 months, as taught by Hall.

Regarding claim 53, Applicants further assert that 250 to 270 days is not merely an optimum value. It is stated that Applicants range does not overlap the ranges disclosed by the references and therefore the references cannot be relied upon for optimizing the process.

These arguments have also been fully considered but are not persuasive.

It is maintained that to have determined the optimum time at which puberty should be induced would have been obvious to one of ordinary skill in the art and well within the skill of the art. It is well settled that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also Merck & Co. v. Biocraft Labs. Inc., 874 F.2d 804, 809, 10 USPQ2d 1843, 1847-48 (Fed. Cir. 1989).

As previously discussed, Petit (page 158) teaches that the time of first estrus varies with the breed of bovine, with Holsteins having their first estrus at 6 to 9 months (i.e., using Applicants' 30.5 days as an average length of a month, 183 to 274.5 days), and hardy breeds of heifers having their first estrus earlier than beef heifers. Petit (page 158) states that "improved feeding of British beef-heifers not only decreases the age but also increases the weight at first heat." Petit also states that age of first estrus is influenced by the bovine's nutritional and environmental conditions. Thus, Petit does teach inducing early puberty by providing a good nutrition and environment to beef cattle. It is also noted that Holsteins may be used for beef and thereby may be

considered beef cattle. Accordingly, the teachings of Petit of inducing puberty in Holsteins by 6 to 9 months by providing good nutritional and environmental conditions does fall within the presently claimed range.

Additionally, as discussed above, the prior art teaches the advantages of inducing early puberty in the single calf heifer system and teaches the parameters which effect the age of first estrus, including the breed of cattle, and the nutritional and environmental conditions in which cattle are raised. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have induced early puberty at a time of about 270 days after birth, depending on the breed of heifer, in order to have provided the most effective integrated breeding system. Optimization of the breeding system so as to have selected the optimum age at which female bovine reach their first estrus, including the ages of about 250 to about 270 days after birth, would have been obvious to one of ordinary skill in the art and the ordinary artisan would have had a reasonable expectation of success of effectively inducing early puberty at about 250 to about 270 days of birth given the guidance provided in the cited prior art.

5. Claims 30 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hohenboken in view of Petit and Hall, and further in view of Seidel (1997).

The teachings of Hohenboken, Petit and Hall are presented above. The combined references do not teach a method in which the quantity of sperm to be used for artificial insemination is no more than 3 million live, non-frozen sperm.

However, Seidel et al (page 1261-1262) teach a method which includes the steps of: a) producing a female bovine mammal; b) inseminating said female bovine mammal

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with a sample containing sorted sperm at a purity of about 90% for X sorted sperm; c) fertilizing at least one egg within the mammal; and d) producing an offspring mammal.

Seidel teaches using  $1-2.5 \times 10^5$  sorted live sperm for each artificial insemination.

Seidel also states that the use of low doses of frozen semen show considerable promise for commercial applications (see page 1262).

In view of the teachings of Seidel, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Hohenboken so as to have used live, non-frozen sperm in situations in which the sperm could be used immediately after sorting because this would have prevented any damage that may occur to the sperm during freezing and thawing, thereby improving the effectiveness of the artificial insemination method.

Regarding claim 45, the use of  $1-2.5 \times 10^5$  sorted live sperm is considered to be less than 50% of a typical artificial insemination dosage of 10 million sperm.

#### **Response to Remarks:**

In the response, Applicants traversed this rejection for the same reasons as stated in paragraph 4 above. Accordingly, the response to those arguments apply equally to the present grounds of rejection.

6. Claims 31 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hohenboken in view Petit and Hall, and further in view of Seidel (1995).

The teachings of Hohenboken, Petit and Hall are presented above. The combined references do not teach a method in which the quantity of sperm to be used for artificial insemination is no more than 3 or 5 million frozen, thawed sperm.

However, Seidel (1995) teaches the effective insemination of heifers with thawed frozen sperm. The reference teaches that no differences were observed when using  $1-5 \times 10^5$  versus  $10 \times 10^6$  sorted sperm.

In view of the teachings of Seidel (1995), it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Hohenboken so as to have used  $1-5 \times 10^5$  thawed-frozen sperm because this would have provided a convenient means for performing the insemination procedure in which the sperm could be sorted and stored prior to its use for artificial insemination.

Regarding claim 45, the use of  $1-5 \times 10^5$  sorted sperm is considered to be less than 50% of a typical artificial insemination dosage of 10 million sperm.

**Response to Remarks:**

In the response, Applicants traversed this rejection for the same reasons as stated in paragraph 4 above. Accordingly, the response to those arguments apply equally to the present grounds of rejection.

7. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hohenboken, Petit and Hall and further in view of Grimes (1991; cited in the IDS of 6/12/01).

The teachings of Hohenboken, Petit and Hall are presented above. The combined references do not teach do not teach early weaning of the female bovine.

However, Grimes (pages 468 and 471) teaches methods in which calves are weaned at 110 or 222 days. Grimes teaches that early weaned calves consumed less food and thereby provide an economic advantage. Grimes also teaches harvesting the



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animals prior to 24 months (Table 3). At pages 471, Grimes states: "Early weaning could be used in an integrated production system to expedite the finishing phase and to slaughter younger animals. It also could be used to accelerate development of females who are to be placed into the breeding herd, thus allowing these females to be bred younger."

In view of the teachings of Grimes, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the method of Hohenboken so as to have weaned the calves early, particularly after 110 days, in order to have provided the advantage set by Grimes of provide a more economical method for managing cows.

**Response to Remarks:**

In the response, Applicants traversed this rejection for the same reasons as stated in paragraph 5 above. Accordingly, the response to those arguments apply equally to the present grounds of rejection.

8. Claims 36, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hohenboken, Petit and Hall and further in view of Deutscher (cited in the IDS of 6/12/01).

The teachings of Hohenboken, Petit and Hall are presented above. The combined references do not teach synchronizing estrus in the bovine prior to artificial insemination.

However, Deutscher teaches synchronizing estrous by dressing animal feed with 0.5 mg MGA for 14 days and injecting PGF at 19 days following the last MGA feeding

(see page 165). The reference teaches that this method of synchronizing heifers results in an increased pregnancy rate (see page 164).

In view of the teachings of Deutscher, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Hohenboken so as to have synchronized estrous by dressing animal feed with 0.5 mg MGA for 14 days and injecting PGF at 19 days following the last MGA feeding order to have achieved the advantage set forth by Deutscher of increasing the pregnancy rates and thereby providing a more effective method for managing cows.

Regarding claim 36, modification of the method of Hohenboken so as to have induced early puberty at about 9 months and to have included the synchronization method of Deutscher would have resulted in a method in which artificial insemination and fertilization of at least one egg occurred between about 283 to 316 days after birth.

**Response to Remarks:**

In the response, Applicants traversed this rejection for the same reasons as stated in paragraph above. Accordingly, the response to those arguments apply equally to the present grounds of rejection.

**Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carla Myers whose telephone number is 571-272-0747. The examiner can normally be reached on Monday-Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on 571-272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Carla Myers/

Primary Examiner, Art Unit 1634